THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method for rendering a microstructured surface of a substrate hydrophobic, the method comprising the steps of:
   - applying to the microstructured surface a coating composition capable of forming a hydrophobic coating having a nanoscale roughness on the microstructured surface; and then
   - curing the composition to form a hydrophobic coating having a nanoscale roughness on the microstructured surface, such that the resultant surface has both nanoscale roughness and microscale roughness.

2. The method as claimed in claim 1, wherein the coating composition comprises one or more tri-functional alkylsilanes, and the hydrophobic coating having a nanoscale roughness is formed by the molecules of the tri-functional alkylsilanes reacting together in a modified sol-gel reaction.

3. The method as claimed in claim 1 or claim 2, wherein the coating composition comprises two or more different tri-functional alkylsilanes, the different alkylsilanes having different length alkyl chains.

4. The method as claimed in claim 3, wherein one of the tri-functional alkylsilanes in the coating composition has an alkyl chain having a length of 3 or less carbon units, and another of the tri-functional alkylsilanes in the coating composition has an alkyl chain having a length of 6 to 30 carbon units.

5. The method as claimed in any one of claims 2 to 4, wherein the functional groups of the tri-functional alkylsilane(s) are independently selected from the group consisting of acetoxy, enoxy, oxime, alkoxy and amino.

6. The method as claimed in any one of claims 2 to 5, wherein the coating composition further comprises a polymer that is capable of chemically bonding to the tri-functional alkylsilane(s) and to the microstructured surface.

7. The method as claimed in claim 6, wherein the polymer is a polysiloxane polymer.

8. The method as claimed in any one of claims 2 to 7, wherein the coating composition further comprises an organic solvent.

9. The method as claimed in claim 8, wherein the organic solvent is ethyl acetate, butyl acetate, toluene, xylene, methyl ethyl ketone, acetone, hexane, light petroleum, diethylether, or tetrahydrofuran.

10. The method as claimed in any one of claims 1 to 9, wherein the composition is applied to form a hydrophobic coating between about 0.1 and about 1 micron thick.

11. The method as claimed in any one of claims 2 to 10, wherein the composition is cured by allowing the composition to dry at about 15°C to about 30°C in the presence of air.

12. The method as claimed in any one of claims 2 to 10, wherein the composition is cured by allowing the composition to dry at about 60°C to about 80°C in the presence of air.

13. The method as claimed in any one of claims 1 to 12, wherein the contact angle of water on the resultant surface is greater than 130°

14. The method as claimed in any one of claims 1 to 13, wherein the contact angle of water on the resultant surface is greater than 150°.

15. The method as claimed in any one of claims 1 to 14, wherein the contact angle of water on the resultant surface is greater than 160°.

16. A method for rendering a surface of a substrate hydrophobic, the method comprising the steps of:

- treating the surface of the substrate to form a microstructured surface;
- applying to the microstructured surface a coating composition capable of forming a hydrophobic coating having a nanoscale roughness on the microstructured surface; and then
- curing the composition to form a hydrophobic coating having a nanoscale roughness on the microstructured surface, such that the resultant surface has both nanoscale roughness and microscale roughness.

17. The method as claimed in claim 16, wherein the surface of the substrate is physically treated to form a microstructured surface.

18. The method as claimed in claim 16, wherein the surface is treated by applying a coating composition to the surface to form a coating on the surface, wherein the coating has a microstructured surface.

19. The method as claimed in claim 18, wherein the microstructured surface is formed by applying a composition comprising microparticles, or smaller particles capable of forming microparticles, to the surface.

20. The method as claimed in claim 19, wherein the microparticles are clay microparticles, cementitious microparticles, or inorganic oxide microparticles.

21. The method as claimed in any one of claims 16 to 20, wherein the composition is applied to form a hydrophobic coating between about 0.1 and about 1 micron thick.

22. A hydrophobic surface produced by the method of any one of claims 1 to 21.

23. A superhydrophobic surface produced by the method of any one of claims 1 to 21.

24. An article having at least one surface that has been rendered hydrophobic according to the method of any one of claims 1 to 21.